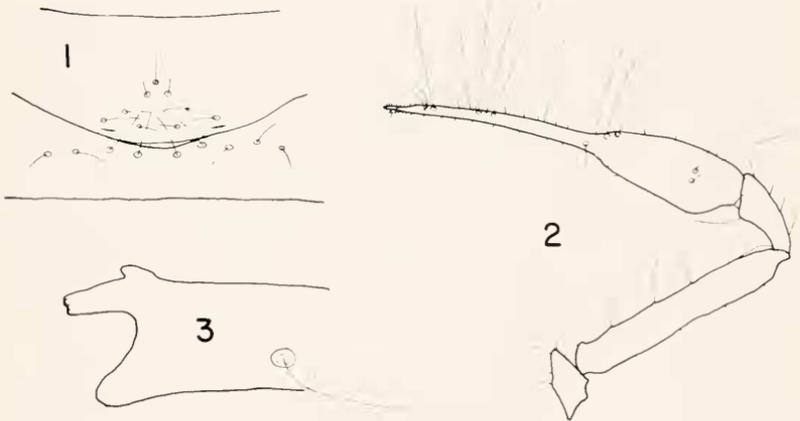


NEW CAVERNICOLOUS SPECIES OF *KLEPTOCHTHONIUS*
FROM VIRGINIA AND WEST VIRGINIA
(PSEUDOSCORPIONIDA, CHTHONIIDAE)¹

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Cavernicolous *Kleptochthonius* species, usually placed in the subgenus *Chamberlinochthonius*, are widespread and sometimes numerous in caves of Kentucky and Tennessee (see Muchmore, 1965). They also occur in caves in Virginia and West Virginia, but appear to be much less common there than farther south. Therefore, it is appropriate to record and describe a new species from each of these states.

Figs. 1-3



Figs. 1-3. *Kleptochthonius* (*Chamberlinochthonius*) *binoculatus*, new species. 1. Genital opercula of female. 2. Dorsal view of right palp. 3. Proximal end of movable finger of chela.

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Kleptochthonius (*Chamberlinochthonius*) *binoculatus*, new species

Material: Holotype female (WM 2743.01001) from Hill Cave, 4 miles NNE of Natural Tunnel, Scott County, Virginia, on 17 August 1972. "Specimen was taken from under a stick on a clay bank. The cave is damp to wet and probably floods occasionally" (John R. Holsinger and David C. Culver).

Diagnosis: A moderate sized species, generally similar to *K. (C.) anophthalmus* Muchmore (1970) from Porter's Cave, Bath County, Virginia, but with distinct, though weak, eyes in the anterior position, with only three or four spines on each coxa I, and with slightly more attenuated palps and legs.

Description of female: With the general features of the subgenus and with the following particular characters. Carapace a little longer than broad; without an epistome; with weakly concave eyes in anterior position, but no eyes or eyespots in posterior position. Carpacial chaetotaxy 6-4-4-2-4=20. Coxal chaetotaxy 2-2-1:0-3-1-CS:2-2:-2-3:2-3; four spines on right coxa I and three on left. Abdominal tergal chaetotaxy 3:4:4:4:6:6:6:8:9:7:T2T:0. Sternal chaetotaxy $\frac{3}{6}$:(3)9(3):(3)8(3):10:10:10:10:11:10:0:2; disposition of setae on genital opercula as shown in Fig. 1.

Chelicera with seven setae on hand; movable finger with a row of seven teeth and another tooth distinctly removed from distal end of row; fixed finger with row of eight teeth, distal one largest; spinneret a low, rounded knob; flagellum of eight pinnate setae.

Palps rather long and attenuated; femur 1.5 and chela 2.3 times as long as carapace; proportions of segments as shown in Figure 2; trochanter 1.8, femur 6.4, tibia 2.1, and chela 5.8 times as long as broad; movable finger 1.55 times as long as hand. Trichobothria of chela arranged as in other species of subgenus. Fixed chelal finger with row of 22 spaced, large, sharp macrodenticles and 13 pointed microdenticles alternating at distal end. Movable finger with 14 macrodenticles and 8 very small, rounded, alternating microdenticles distally and 6 low rounded contiguous teeth at proximal end of row. Proximal end of movable finger with short, slightly irregular process on dorsal side (Fig. 3).

Legs rather slender; leg IV with femur 3.4 and tibia 5.35 times as long as deep. Large tactile setae of usual kind on tibia and tarsi of leg IV.

Male: Unknown

Measurements (mm): Body length 2.15. Carapace length 0.59. Chelicera 0.47 by 0.215. Palpal trochanter 0.27 by 0.15; femur 0.895 by 0.14; tibia 0.325 by 0.155; chela 1.37 by 0.235; hand 0.54 by 0.245; movable finger 0.84 long. Leg IV: entire femur 0.73 by 0.215; tibia 0.51 by 0.095; metatarsus 0.27 by 0.075; telotarsus 0.56 by 0.05.

Etymology: The species is called *binoculatus* in reference to its having only two eyes.

Remarks: When the key provided by Muchmore (1965, p. 2) is used, the new species runs more or less to *K. rex* Malcolm and Chamberlin (1961), but it is much smaller than that species, which is found in Pickett County, Tennessee. Its nearest known neighbors are *K. gertschi* Malcolm and Chamberlin from Gilly's Cave, Lee County, *K. hutzi* Malcolm and Chamberlin from Cudjo's Cave, Lee County, and *K. regulus* Muchmore (1970) from Fallen Rock Cave, Tazewell County, all in Virginia. *K. binoculatus* is easily distinguished from *K. gertschi*, which is completely without eyes. From *K. hutzi* it can be separated by its more attenuated palpal segments and smaller number of coxal spines. And it is very much smaller and less slender than *K. regulus*.

Figs. 4 & 5



Figs. 4 and 5. *Kleptochthonius* (*Chamberlinochthonius*) *hetricki*, new species. 4. Dorsal view of left palp. 5. Proximal end of movable finger of cheta.

Kleptochthonius (*Chamberlinochthonius*) *hetricki*, new species

Material: Holotype male (WM 2657.010001) and paratype female taken in the Greenbrier Caverns System (Masters Section), about two miles SE of Ronceverte, Greenbrier County, West Virginia, on 14 May 1972 (Steven W. Hetrick.)

Diagnosis: A moderate sized species of the *henroti* group (see Muchmore, 1965, p. 3), quite similar to *K. (C). proserpinae* Muchmore from Pollock Cave, Greenbrier County, but with only six setae on hand of chelicera and with relatively shorter and stouter palpal segments.

Description: (The male and female are very similar and are described together. Figures are given first for the holotype male, followed in parentheses by those for the female). With the general features of the subgenus and with the following particular characters. Carapace longer than broad; without epistome; with weakly corneate eyes in the anterior position only. Carapacial chaetotaxy 4-3-5-2-2=16 (4-4-4-2-2=16). Coxal chaetotaxy of male 2-2-1:0-3-0(1)-CS:2-2:2-3:2-3; six spines of the usual type on each coxa 1 (female with eight spines on right and four on left coxa 1). Abdominal tergal chaetotaxy of holotype 4:4:4:4:5:5:6:7:7:6:1T2T:0 (female similar). Sternal chaetotaxy of male $\frac{2}{12}$:(4-4):(3) $\frac{7-8}{8}$ (3):(3)7(3):10:9:10:11:11:9:0:2; of female $\frac{3}{6}$:(3)7(3):(3)7(3):11:9:11:12:12:9:0:2.

Chelicera with six setae on hand; movable finger with a row of seven or eight teeth and another one distinctly removed from the row at the distal end; fixed finger with row of 8-10 teeth; spinneret a low rounded elevation, somewhat more distinct in the female; flagellum of eight pinnate setae.

Palps rather long and attenuated; femur 1.7(1.7) and chela 2.4(2.45) times as long as carapace; proportions of segments as shown in Fig. 4; trochanter 1.9(1.9), femur 6.7(6.4), tibia 2.4(2.2), and chela 6.7(6.05) times as long as broad; movable finger

1.66(1.54) times as long as hand. Arrangement of trichobothria of chela typical. Fixed finger of chela with row of 33(31) spaced, long, sharp macrodenticles and 19(19) short, sharp microdenticles alternating at distal end. Movable finger with 18(20) macrodenticles and 15(15) alternating microdenticles distally and 13(11) low, rounded, contiguous teeth in proximal end of row. Proximal end of movable finger with moderate sized, bifurcate process on dorsal side (apodeme for attachment of adductor muscle) (Fig. 5).

Legs rather slender; leg IV with entire femur 3.7(3.5) and tibia 5.6(5.6) times as long as deep. Large tactile setae of usual kind on tibia and tarsi of leg IV.

Measurements (mm): Body length 2.11(2.15). Carapace length 0.63(0.635), greatest breadth 0.57(0.57). Chelicera 0.525(0.525) by 0.25(0.25). Palpal trochanter 0.30(0.325) by 0.16(0.17); femur 1.07(1.09) by 0.16(0.17); tibia 0.385(0.40) by 0.16(0.18); chela 1.54(1.57) by 0.23(0.26); hand 0.59(0.63) by 0.245(0.265); movable finger 0.985(0.97) long. Leg IV: entire femur 0.92(0.91) by 0.25(0.26); tibia 0.62(0.62) by 0.11(0.11); metatarsus 0.33(0.34) by 0.085(0.09); telotarsus 0.77(0.75) by 0.06(0.06).

Etymology: The species is named for Steven Hetrick who found the type specimens.

Remarks: *Kleptochthonius hetricki* is the third species known to belong to the *henroti* group of the subgenus *Chamberlinochthonius* (see Muchmore, 1965, p. 3). The other two are *K. henroti* (Vachon) from McClung Cave and a number of other caves in central and northcentral Greenbrier County and from Blue Springs Cave in southwestern Pocahontas County, and *K. proserpinae* Muchmore from Pollock Cave in southwestern Greenbrier County, all in West Virginia. The new species occupies the extensive Greenbrier Caverns System in southcentral Greenbrier County which apparently is well isolated from the others to the north and west.

ACKNOWLEDGEMENTS

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ABSTRACT - Two new species are described: *Kleptochthonius* (*Chamberlinochthonius*) *binoculatus* from Scott County, Virginia, and *K. (C.) hetricki* from Greenbrier County, West Virginia. - William B. Muchmore, Department of Biology, University of Rochester, Rochester, New York 14627.

Descriptors: Arachnida; Pseudoscorpionida; Chthoniidae; *Kleptochthonius* (*Chamberlinochthonius*) *binoculatus*, new species, from Virginia; *Kleptochthonius* (*Chamberlinochthonius*) *hetricki*, new species, from West Virginia.